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AUTHOR Teich, Alan; Peregoy, Peter
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ABSTRACT

According to the learned helplessness hypothesis, organisms exposed to uncontrollable events learn the independence between their responses and environmental outcomes. This learning is believed to interfere with subsequent behavior. To further examine the dimension of uncontrollability, 48 college students were given solvable, unsolvable, or no-pretreatment anagrams in varying percentages. All received 20 solvable anagrams immediately following pretreatment. The inclusion of partial-control groups in a learned helplessness model seemed to indicate that some degree of controllability enhanced initial performance compared to the group receiving no control, but had a deleterious effect on performance compared to a group with complete control. Data also seemed to indicate that the group receiving no pretreatment initially performed as poorly as the no-control group. This finding is inconsistent with the hypothesis. (JAC)

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PARTIAL CONTROLLABILITY IN A LEARNED HELPLESSNESS PARADIGM

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by

Alan Teich, University of Pittsburgh at Johnstown

and

Peter Peregoy, University of Pittsburgh at Johnstown

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According to the learned helplessness hypothesis (Maier and Seligman, 1976; Seligman, 1975), organisms exposed to uncontrollable events learn the independence between their responses and environmental outcomes. This learning is said to interfere with subsequent behavior. Organisms receiving no events or controllable events do not show this interference effect.

To examine this interference effect, the typical paradigm used incorporates a group of subjects that receives a completely uncontrollable situation. The present study was an attempt to further examine the dimension of uncontrollability by varying the percentage of uncontrollable anagrams subjects received.

Method

Subjects

Forty-eight volunteer subjects from an introductory psychology class were randomly assigned to one of six groups (N = 8). The subjects were all freshmen and sophomores, aged 18 - 20 years, and were naive with respect to the nature of the study.

Materials

Five-letter, single-solution anagrams were obtained from Tresselt and Mayzner (1966). All anagrams were matched for Thorndike-Lorge frequency. There were 40 anagrams in all, with 20 anagrams used for the pretreatment and 20 used for the test. Pretreatment anagrams were either solvable or unsolvable. For the unsolvable anagrams, the solvable anagrams were transformed, substituting one letter per anagram, such that no solution word could be determined.

Procedure

Subjects received solvable, unsolvable, or no pretreatment anagrams. The solvable group (S) received 20 solvable anagrams, while the control group (C) received no pretreatment anagrams. There were four unsolvable groups (U) in which each received a different percentage of unsolvable anagrams for pretreatment. Groups received either 100, 75, 50, or 25% unsolvable anagrams out of a total of 20 pretreatment anagrams. All groups received 20 solvable test anagrams immediately following pretreatment. The latency to solve, number of errors, and trials-to-criterion (three consecutive responses with latencies of less than 15 secs) were recorded for the test anagrams.

Results

The latency data was subjected to a 5 (trial blocks) x 6 (groups) mixed ANOVA. A significant interaction was obtained ($p < .05$). Simple main effects analyses revealed differences among all groups at all trial blocks ($p < .01$) except trial block 3. Planned comparisons between group S and groups U25, U50, and U75 at trial block 1 revealed significant differences ($p < .05$). Likewise, group U100 significantly differed from groups U25, U50, and U75 at block 1 ($p < .05$). As can be seen in Figure 1, group S consistently demonstrated lowest latencies across blocks. Group C showed average latencies across blocks which significantly differed from group S ($p < .05$).

Analyses of the error data and trials-to-criterion data revealed differences among the groups (p's $< .08$). Again, group S showed better performance on both measures. All other effects were non-significant.

Discussion

The inclusion of partial-control groups in a learned helplessness paradigm seems to indicate that some degree of controllability enhances initial performance compared to a group receving no control but has a deleterious effect on performance compared to a group with complete control. The data also seem to indicate that a group receiving no pretreatment initially performs as poorly as a no-control group. This finding is completely inconsistent with the prediction made by the learned helplessness hypothesis.

Further research exploring this partial controllability should examine objective vs. subjective uncontrollability of the stimuli. More pretreatment trials may enhance the perceived uncontrollability of the situation (Roth, 1980). This, in turn, may decrease the great variability seen in Figure 1 and thus allow true differences among the groups to become clearer. Additionally, it is necessary to examine the enhanced performance of the solvable group compared to the no-pretreatment control group. It is, at present, unclear why this latter group performed so poorly. Finally, the nature of partial uncontrollability must be considered in depth to allow for more accurate generalizations of the interference effect.

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Figure 1. Mean latencies for Groups S, U25, U50, U75, U100, and C across trial blocks